

CHAPTER 1

BLUEPRINTS

When you have read and understood this chapter, you should be able to answer the following learning objectives:

- *Describe blueprints and how they are produced.*
- *Identify the information contained in blueprints.*
- *Explain the proper filing of blueprints.*

Blueprints (prints) are copies of mechanical or other types of technical drawings. The term blueprint reading, means interpreting ideas expressed by others on drawings, whether or not the drawings are actually blueprints. Drawing or sketching is the universal language used by engineers, technicians, and skilled craftsmen. Drawings need to convey all the necessary information to the person who will make or assemble the object in the drawing. Blueprints show the construction details of parts, machines, ships, aircraft, buildings, bridges, roads, and so forth.

BLUEPRINT PRODUCTION

Original drawings are drawn, or traced, directly on translucent tracing paper or cloth, using black waterproof India ink, a pencil, or computer aided drafting (CAD) systems. The original drawing is a tracing or “master copy.” These copies are rarely, if ever, sent to a shop or site. Instead, copies of the tracings are given to persons or offices where needed. Tracings that are properly handled and stored will last indefinitely.

The term *blueprint* is used loosely to describe copies of original drawings or tracings. One of the first processes developed to duplicate tracings produced white lines on a blue background; hence the term *blueprint*. Today, however, other methods produce prints of different colors. The colors may be brown, black, gray, or maroon. The differences are in the types of paper and developing processes used.

A patented paper identified as BW paper produces prints with black lines on a white background. The diazo, or ammonia process, produces prints with either black, blue, or maroon lines on a white background.

Another type of duplicating process rarely used to reproduce working drawings is the photostatic process in which a large camera reduces or enlarges a tracing or drawing. The photostat has white lines on a dark background. Businesses use this process to incorporate reduced-size drawings into reports or records.

The standards and procedures prescribed for military drawings and blueprints are stated in military standards (MIL-STD) and American National Standards Institute (ANSI) standards. The *Department of Defense Index of Specifications and Standards* lists these standards; it is issued on 31 July of each year. The following list contains common MIL-STD and ANSI standards, listed by number and title, that concern engineering drawings and blueprints.

Number	Title
MIL-STD-100A	Engineering Drawing Practices
ANSI Y14.5M-1982	Dimensioning and Tolerancing
MIL-STD-9A	Screw Thread Conventions and Methods of Specifying
ANSI 46.1-1962	Surface Texture
MIL-STD-12C	Abbreviations for Use on Drawings
MIL-STD-14A	Architectural Symbols
ANSI Y32.2	Graphic Symbols for Electrical and Electronic Diagrams
MIL-STD-15	Electrical Wiring Part 2, and Equipment Symbols for Ships and Plans, Part 2
ANSI Y32.9	Electrical Wiring Symbols for Architectural and Electrical Layout Drawings
MIL-STD-16C	Electrical and Electronic Reference Designations
MIL-STD-17B, Part 1	Mechanical Symbols
MIL-STD-17B, Part 2	Mechanical Symbols for Aeronautical, Aerospace craft and Spacecraft use
MIL-STD-18B	Structural Symbols
MIL-STD-21A	Welded-Joint Designs, Armored-Tank Type
MIL-STD-22A	Welded Joint Designs
MIL-STD-25A	Nomenclature and Symbols for Ship Structure

PARTS OF A BLUEPRINT

MIL-STD-100A specifies the size, format, location, and type of information that should be included in military blueprints. These include the information blocks, finish marks, notes, specifications, legends, and symbols you may find on a blueprint, and which are discussed in the following paragraphs.

INFORMATION BLOCKS

The draftsman uses information blocks to give the reader additional information about materials, specifications, and so forth that are not shown in the

blueprint or that may need additional explanation. The draftsman may leave some blocks blank if the information in that block is not needed. The following paragraphs contain examples of information blocks.

Title Block

The title block is located in the lower-right corner of all blueprints and drawings prepared according to MIL-STDs. It contains the drawing number, name of the part or assembly that it represents, and all information required to identify the part or assembly.

It also includes the name and address of the government agency or organization preparing the drawing,

NNDWG NO. 0101 46		NEWPORT NEWS SHIPBUILDING & DRY DOCK CO. NEWPORT NEWS, VIRGINIA HULL DESIGN DIV STRUCTURAL DEPT			
DRAWN <i>J. Doe</i> CHECKED <i>J.R. Frost</i> SUPVR. <i>W.T. Doon</i> DATE <i>5/17/93</i>		TITLE AIRCRAFT CARRIER CVAN 68 DOUBLE BOTTOM AFT OF FRAME 180 COMPARTMENT & ACCESS.			
EXAMINED <i>PT Boat</i>					
DATE COMPLETED <i>5/17/93</i> AUTHORIZED					
APPROVED <i>Vern C. Pinter</i>		DATE JUL 17 1993			
TYPE OF DWG WORKING DRAWING		SIZE H	CODE IDENT NO. 80064	NAVSHIP SYSTEM COMMAND NO. 800	REV 2647537 A
SCALE $\frac{1}{8}'' = 1'$		SHEET 1 OF 1			

A

DES. <i>J. Doe</i>		DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING COMMAND U.S. NAVAL STATION, WASHINGTON, D.C.			
DRWN. <i>J. Doe</i>		INSTALLATION OF NEW LIGHTING BLDG. 220-3E4 WASHINGTON NAVY YARD			
CHK. <i>J.R. Frost</i>					
SUPV. <i>W.T. Doon</i>					
IN CHARGE <i>N. Christman</i>					
SATISFACTORY TO <i>A.B. Seaman</i>					
APPROVED <i>PT. Boat</i> DATE <i>5/17/93</i>		CODE IDENT NO. 80091	SIZE F	FEC DRAWING NO. 1167420	
OFFICER IN CHARGE					
APPROVED <i>Vern C. Pinter</i> DATE <i>5/12/93</i>					
PUBLIC WORKS OFFICER		SCALE $\frac{1}{8}'' = 1'$	SPEC. 82805/68 NBY 82805		SHEET 1 OF 1

B

Figure 1-1.—Blueprint title blocks. (A) Naval Ship Systems Command; (B) Naval Facilities Engineering Command.

the scale, drafting record, authentication, and date (fig. 1-1).

A space within the title block with a diagonal or slant line drawn across it shows that the information is not required or is given elsewhere on the drawing.

Revision Block

If a revision has been made, the revision block will be in the upper right corner of the blueprint, as shown in figure 1-2. All revisions in this block are identified

SPECIFICATIONS

FIXTURE*	PLATE # (9 Y9)	WATTAGE
5	2	100 W
7	2	2-25 W
11	2 (WITH WALL SWITCH)	60 W
23	5	60 W
25	5	100 W
28	5	100 W
50	(SPEC.)	2-40 W
51	(SPEC.)	150 W

LEGEND:

	FLUORESCENT FIXTURE, 8 DENOTES
50	CIRCUIT NUMBER, # 50 DENOTES TYPE
	HOMERUN, 3 - #12 WIRE IN 1/2" CONDUIT
	UNLESS OTHERWISE NOTED, 3/4" CONDUIT IN FLOOR
	DUPLEX RECEPTACLE
S	SWITCH
S ₃	3 WAY SWITCH
	CONDUIT IN FLOOR
	CONDUIT IN CEILING
0 No. 11	OUTLET BOX, FIXTURE No. 11 TO BE INSTALLED
	EXIT LIGHT
	FLOOD LIGHT
	FIRE ALARM SIREN
	BELL - 4 INCH, 110 V. VIBRATING TYPE
	CLOCK OUTLET
	THERMOSTAT
	JUNCTION BOX
	FAN, TOILET ROOMS
	MOTOR CONNECTION
	TELEPHONE OUTLET
	PLUG IN MOULDING
	FIRE ALARM SWITCH 110V.
	110V. PUSH BUTTON FOR BELLS

NOTE: SEE SPECIFICATIONS FOR DETAILED INFORMATION ON LIGHTING FIXTURES

FLUORESCENT LIGHT DETAIL
NO SCALE
FIXTURE 50, 2 40 W

	SATISFACTORY TO		
	DATE		
	SUBMITTED BY.	John A. Doe ARCHITECT	
	DATE	10/22/92	
DPW DRAWING NO. 54409 DEPARTMENT OF THE NAVY DISTRICT PUBLIC WORKS OFFICE BUREAU OF YARDS & DOCKS 5TH RD NORFOLK, VA.		REVISIONS ARCHITECT John A. Doe LEXINGTON, KY. NAVAL RESERVE ELECTRONICS FACILITY DANVILLE, KENTUCKY ELECTRICAL PLAN RISER DIAGRAM	
DES. DRWN. CHR. PROJ. MGR. D P W O. CHR. FL. BR. MGR. L.A.S. SP. ASST. DIR. DES.		APPROVED FOR BUREAU OF YARDS & DOCKS SCALE AS SHOWN SPEC 20326/88 SHEET 2 OF 8 NO. 20326 Y&D DRAWING NO. 811708-1	

REFERENCE
NUMBER

Figure 1-2.—Electrical plan.

by a letter and a brief description of the revision. A revised drawing is shown by the addition of a letter to the original number, as in figure 1-1, view A. When the print is revised, the letter A in the revision block is replaced by the letter B and so forth.

Drawing Number

Each blueprint has a drawing number (fig. 1-1, views A and B), which appears in a block in the lower right corner of the title block. The drawing number can be shown in other places, for example, near the top border line in the upper corner, or on the reverse side at the other end so it will be visible when the drawing is rolled. On blueprints with more than one sheet, the information in the number block shows the sheet number and the number of sheets in the series. For example, note that the title blocks shown in figure 1-1, show sheet 1 of 1.

Reference Number

Reference numbers that appear in the title block refer to numbers of other blueprints. A dash and a number show that more than one detail is shown on a drawing. When two parts are shown in one detail drawing, the print will have the drawing number plus a dash and an individual number. An example is the number 811709-1 in the lower right corner of figure 1-2.

In addition to appearing in the title block, the dash and number may appear on the face of the drawings near the parts they identify. Some commercial prints use a leader line to show the drawing and dash number of the part. Others use a circle $\frac{3}{8}$ inch in diameter around the dash number, and carry a leader line to the part.

A dash and number identify changed or improved parts and right-hand and left-hand parts. Many aircraft parts on the left-hand side of an aircraft are mirror images of the corresponding parts on the right-hand side. The left-hand part is usually shown in the drawing.

On some prints you may see a notation above the title block such as "159674 LH shown; 159674-1 RH opposite." Both parts carry the same number. LH means left hand, and RH means right hand. Some companies use odd numbers for right-hand parts and even numbers for left-hand parts.

Zone Number

Zone numbers serve the same purpose as the numbers and letters printed on borders of maps to help you locate a particular point or part. To find a point or part, you should mentally draw horizontal and vertical lines from these letters and numerals. These lines will intersect at the point or part you are looking for.

You will use practically the same system to help you locate parts, sections, and views on large blueprinted objects (for example, assembly drawings of aircraft). Parts numbered in the title block are found by looking up the numbers in squares along the lower border. Read zone numbers from right to left.

Scale Block

The scale block in the title block of the blueprint shows the size of the drawing compared with the actual size of the part. The scale may be shown as $1'' = 2''$, $1'' = 12''$, $1/2'' = 1'$, and so forth. It also may be shown as full size, one-half size, one-fourth size, and so forth. See the examples in figure 1-1, views A and B.

If the scale is shown as $1'' = 2''$, each line on the print is shown one-half its actual length. If a scale is shown as $3'' = 1''$, each line on the print is three times its actual length.

The scale is chosen to fit the object being drawn and space available on a sheet of drawing paper.

Never measure a drawing; use dimensions. The print may have been reduced in size from the original drawing. Or, you might not take the scale of the drawing into consideration. Paper stretches and shrinks as the humidity changes. Read the dimensions on the drawing; they always remain the same.

Graphical scales on maps and plot plans show the number of feet or miles represented by an inch. A fraction such as $1/500$ means that one unit on the map is equal to 500 like units on the ground. A large scale map has a scale of $1'' = 10'$; a map with a scale of $1'' = 1000'$ is a small scale map. The following chapters of this manual have more information on the different types of scales used in technical drawings.

Station Number

A station on an aircraft may be described as a rib (fig. 1-3). Aircraft drawings use various systems of station markings. For example, the centerline of the

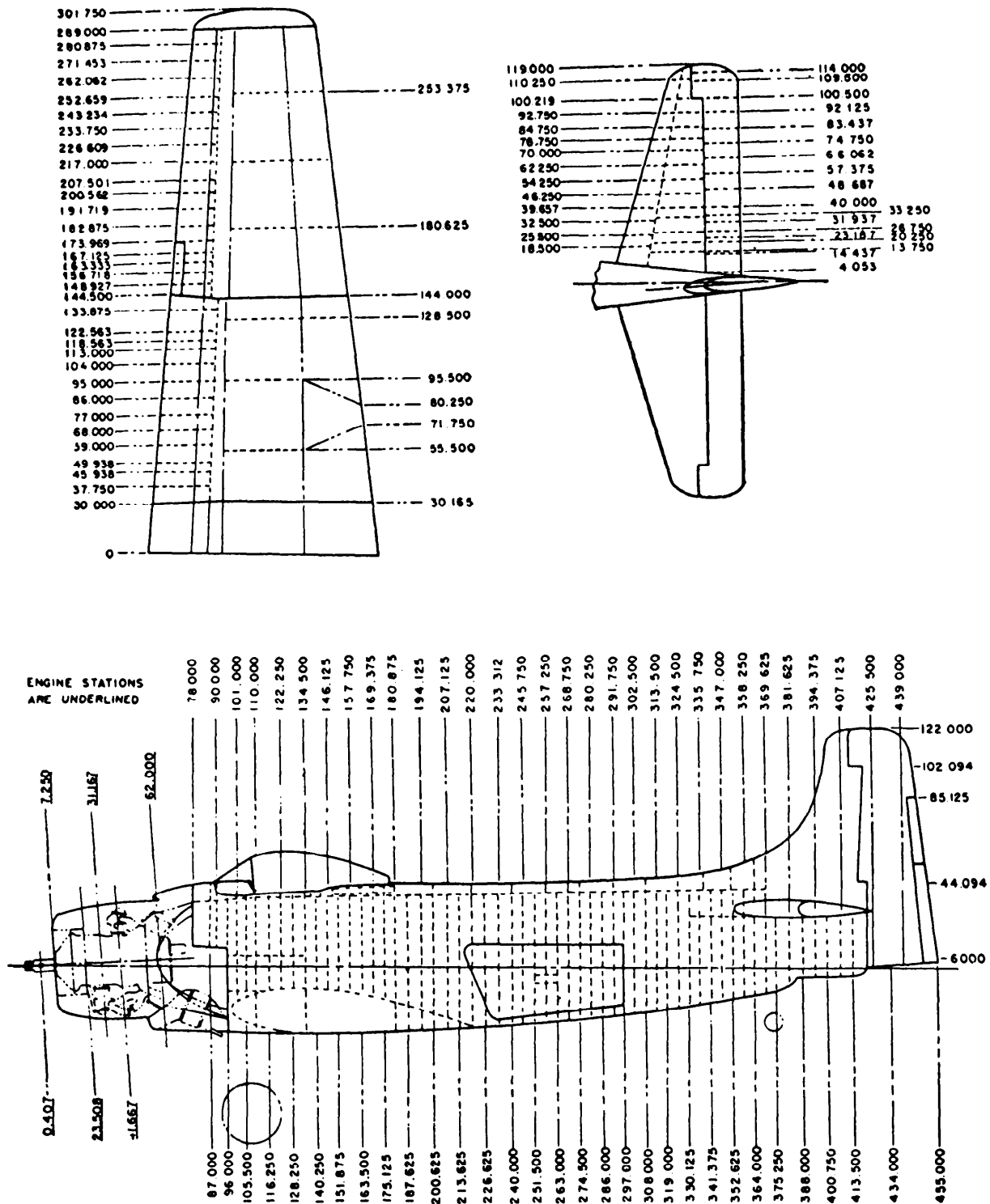


Figure 1-3.—Aircraft stations and frames.

aircraft on one drawing may be taken as the zero station. Objects to the right or left of center along the wings or stabilizers are found by giving the number of inches between them and the centerline zero station. On other drawings, the zero station may be at the nose of the fuselage, at a firewall, or at some other location depending on the purpose of the drawing. Figure 1-3 shows station numbers for a typical aircraft.

Bill of Material

The bill of material block contains a list of the parts and/or material needed for the project. The block identifies parts and materials by stock number or other appropriate number, and lists the quantities required.

The bill of material often contains a list of standard parts, known as a parts list or schedule. Figure 1-4 shows a bill of material for an electrical plan.

Application Block

The application block on a blueprint of a part or assembly (fig. 1-5) identifies directly or by reference the larger unit that contains the part or assembly on the drawing. The NEXT ASS'Y (next assembly) column will contain the drawing number or model

2A	1AB
NEXT ASS'Y	USED ON
APPLICATION	

Figure 1-5.—Application block.

BILL OF MATERIAL					
ITEM NO.	DESCRIPTION	UNIT	ASSEMBLY OR FSN NO.	QUANTITIES	
				TROP	NORTH
3-1	LIGHTING CIRCUIT — NAVFAC DWG NO. 283414	EA.	3016	3	3
3-2	POWER BUS, 100A — NAVFAC DWG NO. 504131	EA	3047	1	1
3-3	RECEPTACLE CKT — NAVFAC DWG NO. 303668	EA	3019	2	2
3-4	BOX, RECEPTACLE W/CLAMP FOR NONMETALLIC SHEATH WIRE	EA	5323-102-804	5	5
3-5	LAMP ELECTRIC, MED BASE, INSIDE FROSTED, 200W, 120 V	EA	6240-180-314	60	60
3-6	PLUG: ATTACHMENT, 3 WIRE, 15 AMP, 125 V	EA	5935-102-309	10	10
3-7	PLATE BRASS, DUPLEX RECEPTACLE	EA	5325-800-101	5	5
3-8	RECEPTACLE, DUPLEX, 3 WIRE, 15 AMP, 125V.	EA	5326-100-102	5	5
3-9	ROD, GROUND, 3/4" x 10'-0"	EA	5308-200-180	12	12
3-10	WIRE, NO 2 1/C STRANDED, HARD DRAWN, BARE	LB	6143-134-200	52	52
3-11	SWITCH, SAFETY, 2P, 37 30 AMP, 280 V, PLUG FUSE	EA	5930-142-401	2	2
3-12	CLAMP, GROUND ROD	EA	5209-100-101	15	15
3-13	SWITCH, SAFETY, 200 AMP, 280V, 3P	EA	5930-201-903	1	1
3-14	FUSE, RENEWABLE, 200 AMP, 280 V	EA	5920-100-000	6	6
3-15	LINK, FUSE, 200 AMP, 250 V	EA	5920-100-001	6	6
	FUSE PLUG, 30 AMP, 125 V	EA	5920-100-102	12	12

Figure 1-4.—Bill of material.

number of the next larger assembly of which the smaller unit or assembly is a part. The USED ON column shows the model number or equivalent designation of the assembled units part.

FINISH MARKS

Finish marks (✓) used on machine drawings show surfaces to be finished by machining (fig. 1-6). Machining provides a better surface appearance and a better fit with closely mated parts. Machined finishes are NOT the same as finishes of paint, enamel, grease, chromium plating, and similar coatings.

NOTES AND SPECIFICATIONS

Blueprints show all of the information about an object or part graphically. However, supervisors, contractors, manufacturers, and craftsmen need more information that is not adaptable to the graphic form of presentation. Such information is shown on the drawings as notes or as a set of specifications attached to the drawings.

NOTES are placed on drawings to give additional information to clarify the object on the blueprint (fig. 1-2). Leader lines show the precise part notated.

A SPECIFICATION is a statement or document containing a description such as the terms of a contract or details of an object or objects not shown on a blue

print or drawing (fig. 1-2). Specifications describe items so they can be manufactured, assembled, and maintained according to their performance requirements. They furnish enough information to show that the item conforms to the description and that it can be made without the need for research, development, design engineering, or other help from the preparing organization.

Federal specifications cover the characteristics of material and supplies used jointly by the Navy and other government departments.

LEGENDS AND SYMBOLS

A legend, if used, is placed in the upper right corner of a blueprint below the revision block. The legend explains or defines a symbol or special mark placed on the blueprint. Figure 1-2 shows a legend for an electrical plan.

THE MEANING OF LINES

To read blueprints, you must understand the use of lines. The alphabet of lines is the common language of the technician and the engineer. In drawing an object, a draftsman arranges the different views in a certain way, and then uses different types of lines to convey information. Figure 1-6 shows the use of standard lines in a simple drawing. Line characteristics

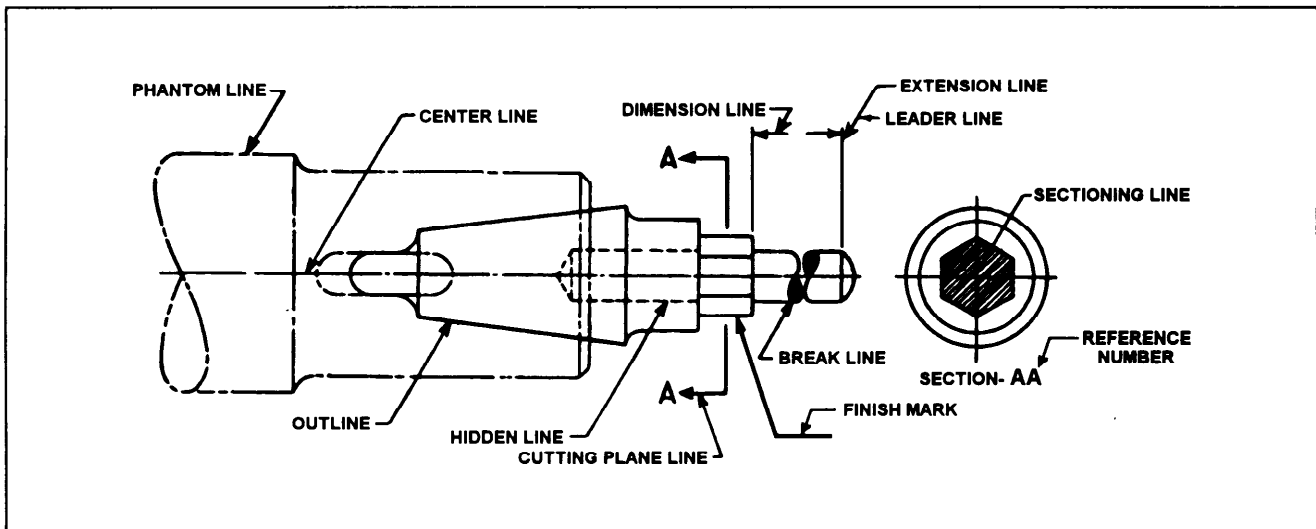


Figure 1-6.—Use of standard lines.

such as width, breaks in the line, and zigzags have meaning, as shown in figure 1-7.

SHIPBOARD BLUEPRINTS

Blueprints are usually called plans. Some common types used in the construction, operation, and maintenance of Navy ships are described in the following paragraphs.

PRELIMINARY PLANS are submitted with bids or other plans before a contract is awarded.

CONTRACT PLANS illustrate mandatory design features of the ship.

CONTRACT GUIDANCE PLANS illustrate design features of the ship subject to development.

STANDARD PLANS illustrate arrangement or details of equipment, systems, or parts where specific requirements are mandatory.

TYPE PLANS illustrate the general arrangement of equipment, systems, or parts that do not require strict compliance to details as long as the work gets the required results.

WORKING PLANS are those the contractor uses to construct the ship.

CORRECTED PLANS are those that have been corrected to illustrate the final ship and system arrangement, fabrication, and installation.


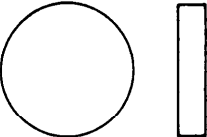



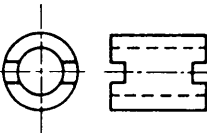

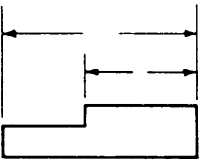

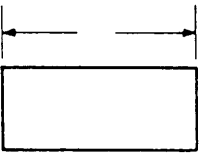
LINE STANDARDS			
NAME	CONVENTION	DESCRIPTION AND APPLICATION	EXAMPLE
VISIBLE LINES		HEAVY UNBROKEN LINES USED TO INDICATE VISIBLE EDGES OF AN OBJECT	
HIDDEN LINES		MEDIUM LINES WITH SHORT EVENLY SPACED DASHES USED TO INDICATE CONCEALED EDGES	
CENTER LINES		THIN LINES MADE UP OF LONG AND SHORT DASHES ALTERNATELY SPACED AND CONSISTENT IN LENGTH USED TO INDICATE SYMMETRY ABOUT AN AXIS AND LOCATION OF CENTERS	
DIMENSION LINES		THIN LINES TERMINATED WITH ARROW HEADS AT EACH END USED TO INDICATE DISTANCE MEASURED	
EXTENSION LINES		THIN UNBROKEN LINES USED TO INDICATE EXTENT OF DIMENSIONS	

Figure 1-7.—Line characteristics and conventions for MIL-STD drawings.

ONBOARD PLANS are those considered necessary as reference materials in the operation of a ship. A shipbuilder furnishes a completed Navy ship with copies of all plans needed to operate and maintain the ship (onboard plans), and a ship's plan index (SPI). The SPI lists all plans that apply to the ship except those for certain miscellaneous items covered by standard or type plans. Onboard plans include only those plans NAVSHIPS or the supervisor of ship building consider necessary for shipboard reference. The SPI is NOT a check list for the sole purpose of getting a complete set of all plans.

When there is a need for other plans or additional copies of onboard plans, you should get them from your ship's home yard or the concerned system command. Chapter 9001 of the Naval Ships'

Technical Manual (NSTM) contains a guide for the selection of onboard plans.

BLUEPRINT NUMBERING PLAN

In the current system, a complete plan number has five parts: (1) size, (2) federal supply code identification number, (3 and 4) a system command number in two parts, and (5) a revision letter. The following list explains each part.

1. The letter under the SIZE block in figure 1-1, view A, shows the size of the blueprint according to a table of format sizes in MIL-STD-100.

2. The federal supply code identification number shows the design activity. Figure 1-1, view A, shows an example under the block titled CODE IDENT NO


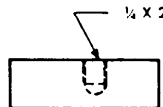

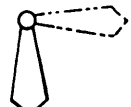
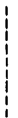
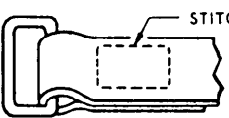
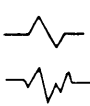
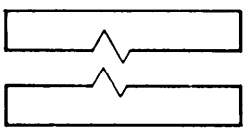


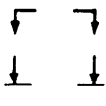
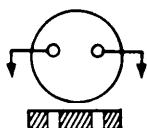

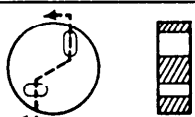
NAME	CONVENTION	DESCRIPTION AND APPLICATION	EXAMPLE
LEADER		THIN LINE TERMINATED WITH ARROW-HEAD OR DOT AT ONE END USED TO INDICATE A PART, DIMENSION OR OTHER REFERENCE	
PHANTOM OR DATUM LINE		MEDIUM SERIES OF ONE LONG DASH AND TWO SHORT DASHES EVENLY SPACED ENDING WITH LONG DASH USED TO INDICATE ALTERNATE POSITION OF PARTS, REPEATED DETAIL OR TO INDICATE A DATUM PLANE	
STITCH LINE		MEDIUM LINE OF SHORT DASHES EVENLY SPACED AND LABELED USED TO INDICATE STITCHING OR SEWING	
BREAK (LONG)		THIN SOLID RULED LINES WITH FREEHAND ZIG-ZAGS USED TO REDUCE SIZE OF DRAWING REQUIRED TO DELINEATE OBJECT AND REDUCE DETAIL	
BREAK (SHORT)		THICK SOLID FREE HAND LINES USED TO INDICATE A SHORT BREAK	
CUTTING OR VIEWING PLANE VIEWING PLANE OPTIONAL		THICK SOLID LINES WITH ARROWHEAD TO INDICATE DIRECTION IN WHICH SECTION OR PLANE IS VIEWED OR TAKEN	
CUTTING PLANE FOR COMPLEX OR OFFSET VIEWS		THICK SHORT DASHES USED TO SHOW OFFSET WITH ARROW-HEADS TO SHOW DIRECTION VIEWED	

Figure 1-7.—Line characteristics and conventions for MIL-SDT drawings—Continued.

where the number 80064 identifies NAVSHIPS. In view B, the number 80091 identifies the Naval Facilities Engineering Command.

3. The first part of the system command number is a three-digit group number. It is assigned from the *Consolidated Index of Drawings, Materials, and Services Related to Construction and Conversion*, NAVSHIPS 0902-002-2000. This number identifies the equipment or system, and sometimes the type of plan. In figure 1-1, view A, the number 800 under the NAVSHIP SYSTEM COMMAND NO. block identifies the plan as a contract plan.

4. The second part of the system command number is the serial or file number assigned by the supervisor of shipbuilding. Figure 1-1, view A, shows the number 2647537 as an example under the NAVSHIP SYSTEM COMMAND NO. block.

5. The revision letter was explained earlier in the chapter. It is shown under the REV block as A in figure 1-1, view A.

Figure 1-8, view B, shows the shipboard plan numbering system that was in use before the adoption of the current system (view A). They two systems are similar with the major differences in the group numbers in the second block. We will explain the purpose of each block in the following paragraphs so you can compare the numbers with those used in the current system.

The first block contains the ship identification number. The examples in views A and B are DLG 16 and DD 880. Both refer to the lowest numbered ship to which the plan applies.

The second block contains the group number. In view A, it is a three-digit number 303 taken from NAVSHIPS 0902-002-2000 and it identifies a lighting system plan. View B shows the group number system

in use before adoption of the three-digit system. That system used S group numbers that identify the equipment or system concerned. The example number S3801 identifies a ventilating system. To use this number, relate it to the proper chapter of an NSTM. Replace the S with the 9 of an NSTM chapter number and drop the last digit in the number. For example, the number S3801 would produce the number 9380, or chapter 9380 of the NSTM titled "Ventilation and Heating."

Blocks 3, 4, and 5 use the same information in the old and new systems. Block 3 shows the size of the plan, block 4 shows the system or file number, and block 5 shows the version of the plan.

FILING AND HANDLING BLUEPRINTS

On most ships, engineering logroom personnel file and maintain plans. Tenders and repair ships may keep plan files in the technical library or the microfilm library. They are filed in cabinets in numerical sequence according to the three-digit or S group number and the file number. When a plan is revised, the old one is removed and destroyed. The current plan is filed in its place.

The method of folding prints depends upon the type and size of the filing cabinet and the location of the identifying marks on the prints. It is best to place identifying marks at the top of prints when you file them vertically (upright), and at the bottom right corner when you file them flat. In some cases construction prints are stored in rolls.

Blueprints are valuable permanent records. However, if you expect to keep them as permanent records, you must handle them with care. Here are a few simple rules that will help.

- Keep them out of strong sunlight; they fade.
- Don't allow them to become wet or smudged with oil or grease. Those substances seldom dry out completely and the prints can become unreadable.
- Don't make pencil or crayon notations on a print without proper authority. If you are instructed to mark a print, use a proper colored pencil and make the markings a permanent part of the print. Yellow is a good color to use on a print with a blue background (blueprint).
- Keep prints stowed in their proper place. You may receive some that are not properly folded and you must refold them correctly.

DLG 16	303	H	1844928	A
A-CURRENT SYSTEM				
DD 880	S3801	H	1257161	A
B-EARLIER SYSTEM				

Figure 1-8.—Shipboard plan numbers.